AUTHORS: Shubin, G.K., Candidate of Technical Sciences; Mironov, L.V., Engineer

TITLE: The Formation of Texture During High-temperature Annealing of Cold-rolled Transformer Steel. (Obrazovaniye tekstury pri vysokotemperaturnom otzhige kholodnokatanoy transformatornoy stali)

PERIODICAL: Stal', 1958, Nr 7, pp 648 - 650 (USSR)

ABSTRACT: The mechanism of formation of texture under conditions of final annealing of cold-rolled transformer steel at various rates and temperatures of heating was investigated. Specimens of an industrial strip of the following composition were taken for the investigation: C 0.04%, Si 2.96%, Mn 0.02%, P 0.009%, S 0.00?%. Specimens (20 x 30 mm) cut from unannealed strip were heated in vacuum at 3 000 °C/min and 80 ° and 2 000 °C/hr [illegible] was determined by measuring normal component of recrystallisation. As all the specimens underwent the same degree of deformation and the type of the recrystallisation texture did not vary, a simplified method of [illegible] of texture based on the determination [illegible] specimen was utilised. The dependence of the [illegible]

Card1/3

The Formation of Texture D[illegible] High-temperature A[illegible]
Cold-rolled Transformer Steel

of transformer steel on texture - Figure 1; the [illegible] of the annealing temperature and duration of [illegible] anisotropy of steel (at heating rate of 2 CCC °C/[illegible] - Figure 2; crystal growth after annealing at 925 °C - Figure 3 and after annealing at 1 000 °C - Figure 4; the influence of heating temperature and the duration of [illegible] during annealing on the development of the [illegible] steel at a heating rate of 30 °C/hour (A) and 2 COC °C/hour (B) - Figure 5. It is concluded that in order to obtain a metal with a well developed texture a slow heating [illegible] range 900 - 950 °C is necessary; a heating rate of 75-C C/hour secures the conclusion of the process of secondary recrystallisation without special soaking; at [illegible] of 100 °C/hour and above, it would be advantageous to use step-wise heating with a soaking in the range of 925- 950 °C. In order to obtain steel with a comparatively low anisotropy of magnetic properties, a high heating rate during annealing is necessary (200 - 250 °C/min). It is pointed in the editorial note that the recommendation for a step heating with a soaking at 925 - 950 °C for [illegible]

Card2/3

The Formation of Texture During High-temperature Annealing of Cold-rolled Transformer Steel SOV/133-58-[illegible]/[illegible]

heating at 100 °C/hour and above does not follow from the results of the investigation. On the basis of the data shown, such soaking is necessary only at [illegible] the order of 2 000 - 3 000 °C/hour.
There are 5 figures.

ASSOCIATIONS: Verkh-Isetskiy Zavod (Verkh-Isetskiy Plant) and Ural'skiy institut chernykh metallov (Ural Steel Institute)

Card 3/3 1. Steel--Heat treatment 2. Steel--Properties 3. Steel--[illegible] results

AUTHOR: Mironov, L. V.

TITLE: Texture Formation During Annealing of Cold Rolled Transformer Sheet Iron (Teksturoobrazovaniye pri otzhige kholodnokatanoy transformatornoy stali)

SOV/48-22-10-13/23

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958, Vol 22, Nr 10, pp 1231 - 1236 (USSR)

ABSTRACT: In the present work cold rolled industrial iron bands, 0.35 and 0.50 mm thick, of differently melted transformer steel were examined. When cold rolled transformer sheet iron is annealed which was rolled twice and annealed between or rolled once (shrinkage > 75%) a secondary recrystallization takes place. In this instance conditions for a predominant growth of the oriented grains are developed. The optimum temperature for obtaining a perfect texture is the temperature at the beginning of the secondary recrystallization when the most exactly oriented growth centers start forming. As at this temperature the number of growth centers and the linear velocity of growth are low the process takes about 6 hours. An increase of the heating temperature leads to the formation of a higher number of growth centers,

Card 1/3

Texture Formation During Annealing of Cold Rolled Transformer Sheet Iron

SOV/48-22-10-13/23

but to an accurate orientation of these centers. The process becomes accelerated but results in smaller and poorly oriented grains. When heating is slow the secondary recrystallization is completed at optimum temperatures. A rapid heating results in smaller grains and in an imperfect texture. Therefore under industrial conditions it proves to be suitable to employ an average soaking time for the case that the heating velocity does not grant the required soaking period of the steel in the temperature range of 900 to 1000°. The secondary recrystallization is also influenced by the particular features of melting regimen, by the high-temperature preheating, and by the rolling with a critical hardening by quenching. Low-temperature annealing does not influence the secondary recrystallization. In the development of schedules for the technical production of cold-rolled transformer sheet iron of various types the occurrence of secondary recrystallization and its particular features must be considered. There are 7 figures, 1 table, and 5 references, 4 of which are Soviet.

Card 2/3

Texture Formation During Annealing of Cold Rolled Transformer Sheet Iron

SOV/48-22-10-13/23

ASSOCIATION: Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov (Ural Scientific Research Institute of Ferrous Metals)

Card 3/3

SOV/129-59-1-7/17

AUTHORS: Mironov, L.V., Engineer, Sazonov, V.G., Candidate of Technical Sciences, Levitin, V.V., Engineer and Rodigin, N.M., Candidate of Physico-mathematical Sciences

TITLE: Influence of Electri. Heating on the Properties of Cold-rolled Stainless Steels (Vliyaniye elektronagreva na svoystva kholodnokatanykh nerzhaveyushchikh staley)

PERIODICAL: Metallovedeniye i Termicheskaya Obrabotka Metallov, 1959, Nr 1, pp 26 - 30 (USSR)

ABSTRACT: The influence was studied of electric annealing of the cold-rolled steels 1Kh18N9, 1Kh18N9T and Kh13N4G9 on their mechanical properties, the recrystallisation processes and the resistance of these steels against intercrystallite corrosion. The compositions and the main data of these steels are entered in Table 1, p 26. The specimens were heated with speeds of 100, 300, 600 and 1 000 °C/sec up to 900-1 400 °C and immediately after that were cooled in air. From thus-treated strips (20 × 200 mm), specimens for mechanical tests were prepared. The results of tensile tests are graphed in Figure 1, p 27 and it can be seen that the desired mechanical properties can be ensured by electric heating with speeds of 100 to 1 000 °C/sec without subsequent

Card1/3

Influence of Electric Heating on the Properties of Cold-rolled Stainless Steels

holding at the particular temperature. The optimum properties are obtained after heating to 1 150 - 1 200 °C. In Figure 2, p 20, micrographs are reproduced of the structure of the steel 1Kh18N9T after annealing with electric heating as well as with ordinary heating. On the basis of the results of investigations of the resistance of materials to intercrystallite corrosion, the authors conclude that the process of recrystallisation of cold-rolled austenitic stainless steels, under conditions pertaining to electric heating, proceeds with a very high speed but at a higher temperature than in the case of ordinary heating. Softening and the desired mechanical properties of the steels 1Kh18N9, 1Kh18N9T and Kh13N4G9 at heating speeds of 100 - 1 000 °C/sec are attained at 1 150 - 1 200 °C. On the basis of corrosion studies, it is concluded that the necessary resistance against intercrystallite corrosion can be ensured with any of the investigated heating speeds for steels 1Kh18N9 and Kh13N4G9 and with heating speeds of 100 and 300 °C/sec in

Influence of Electric Heating on the Properties of Cold-rolled Stainless Steels

in the case of the steel 1Kh18N9T; if higher heating speeds are used the carbon in this steel has to be combined first into titanium carbide.
There are 4 figures, 2 tables and 6 Soviet references.

ASSOCIATIONS: Ural'skiy institut chernykh metallov (Ural Institute of Ferrous Metals) and
Institut fiziki metallov UFAN (Institute of Physics of Metals of the Ural Branch of the Ac.Sc.)

18(3), 18(7), 24(2) SOV/126-7-2-30/39

AUTHORS: Grigorov, K.V., Malyshev, K.A., Mironov, L.V., Rodigin, N.M. and Sazonov, B.G.

TITLE: On the Influence of the Speed of Heating on the Recrystallization Texture of Transformer Steel (O vliyanii skorosti nagreva na teksturu rekristallizatsii transformatornoy stali)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1958, Vol. 7, No , pp 305-306 (USSR)

ABSTRACT: In conjunction with the development of a method of heat treatment of moving steel strip by induction heating, the authors of this paper investigated the kinetics of the processes taking place during rapid heating of cold-rolled strip of various grades: carbon, ammo, transformer and stainless steels. It was established that re-crystallization and grain growth proceed at a very high speed. Thus, for instance, it is possible to effect recrystallization in less than 0.1 sec, including the heating time. This permits electric annealing of cold-rolled strip of the above mentioned grades, wit the exception of transformer steel, at very high speeds

Card 1/5

On the Influence of the Speed of Heating on the Recrystallization Texture of Transformer Steel

and short time durations, ensuring thereby all the properties specified by the GOST specifications. For cold-rolled transformer steel, the authors studied additionally the influence of the speed of heating on the degree of perfection of the texture and it is to this problem that the present paper is devoted. The investigations were carried out on industrially produced 0.5 and 0.35 mm thick strip with a Si content of 3.0 to 3.2%, produced by cold-rolling twice with an intermediate anneal at 800 to 850°C, whereby the relative reduction during each pass amounted to 50-60%. For the investigations the specimens were taken from melts intended for finished products with greatly differing properties. Heating of the specimens to 1000-1300°C was effected in ordinary furnace and in a salt bath with various heating durations between 1 sec and 15 mins and also by direct passage of electric currents through the specimen. In all cases the specimens were cooled in air after heating. The heating speed varied between 1°C/min and 1000°C/sec. On the

SOV/126-7-2-30/39

On the Influence of the Speed of Heating on the Secondary Recrystallization Texture of Transformer Steel

basis of the obtained results the following conclusions were arrived at:

1. With increasing heating speed a continuous decrease occurs in the degree of perfection of the texture obtained at the respective temperatures. Holding at the respective heating temperature brings about a slight improvement of the degree of perfection of the texture. On heating with a speed of the order of 1°C/min, the degree of perfection of the texture reaches 95%, whilst on heating at a speed of 300 to 1000°C/sec it does not exceed 25-30%. The heating speed does not influence the type of texture: at all heating regimes the texture is characterized by the predominance of the orientation {110} and ⟨001⟩.

2. On heating at a speed of 300-1000°C/sec up to temperatures of 1000-1300°C, the grains grow to dimensions which are commensurate with the thickness of the sheet, consequently an increased heating speed does not suppress the grain growth generally but only preferential

Card 3/5

growth of grains which are orientated in a certain way.
3. What was said in paragraph 1 relates to melts which, under industrial conditions, yield a perfect structure and favourable magnetic properties. In specimens obtained from heats which yield poor magnetic properties, a relatively low degree of perfection of the texture is obtained for all heating regimes which, in the best case, does not exceed 50%; the type of texture of the specimens from heats of this group is also characterized by the fact that the predominant orientation of the grains is $\{110\}\langle 001\rangle$. As regards the processes of texture formation, slow heating of specimens obtained from such heats provides only insignificant advantages as compared to rapid heating. The problem of the influence of the speed of heating on the formation of recrystallization textures of cold-rolled materials has so far not been elucidated in literature.
Assmus et al. (Ref 1) published certain data on the kinetics of the process of texture formation at various temperatures. Indirectly the results of these authors

On the Influence of the Speed of Heating on the Recrystallization Texture of Transformer Steel

SOV/126-7-1-30/

are in agreement with the results given in this paper. There is one German reference.

(Note: This is a complete translation)

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Metal Physics, Ac.Sc., USSR)

SUBMITTED: March 2, 1958

Card 5/5

18(3), 24(2)
AUTHORS: Mironov, L. V. and Shutil', [illegible]

TITLE: Role of Secondary Recrystallization in Texture Formation on Annealing Cold-Rolled Transformer [illegible] (O roli vtorichnoy rekristallizatsii [illegible] v teksturo-obrazovanii pri otzhige kholodnokatanoy transformatornoy stali)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1958, V. [illegible], pp 312-314 (USSR)

ABSTRACT: Considerable attention has been devoted to the [illegible] collective recrystallization [illegible] of cold-rolled transformer steel (Ref. 1-[illegible]). As a result of these investigations, [illegible] gaining ground that an increase in the degree of perfection of texture must [illegible] recrystallization, if the latter does not become complicated by any subsidiary effects. In this respect of Grigorov et al. (Ref 4) data on the change in texture of transformer steel in the course of collective recrystallization are given, and an attempt is made to explain why grain growth during annealing leads to an increase in the sharpness of the recrystallization

Card 1/6

Role of Secondar[illegible] Recrystallization [illegible]
Annealing Cold-Rolled Transformer Steel

texture. The increase [illegible] observed by the authors [illegible] tion, consisted [illegible] the oriented grains [illegible] 26% (annealed at [illegible]. Under industrial conditions the degree of texture perfection of cold-rolled transformer steel reaches [illegible]. Therefore, the existing explanation of the mechanism of texture formation is incomplet[illegible] consideration all phenomena occurring [illegible] of textured steel. In particular, [illegible] results obtained by the authors [illegible] kinetics of texture formation [illegible] transformer steel at various [illegible] tures, may be of some interest [illegible] that on certain cold-rolled [illegible] temperature of over [illegible], [illegible] tion occurs, which at present [illegible] special case of rain growth. [illegible] tion, special conditions [illegible]

Card 2/6

Role of Secondary Recrystallization in [illegible] Annealing Cold-Rolled Transformer Steel

of grains orientated [illegible] secondary recrystallization [illegible] on the degree of texture [illegible] recrystallization [illegible] transformer steel is [illegible] texture is formed, which [illegible] grain size increases. The [illegible] degree of texture [illegible] of collective recrystallization. In the [illegible] continuous grain growth, [illegible] increase. [illegible] 30-35%. If, however, [illegible] place, a most significant [illegible] texture perfection is [illegible] grains in texture occurs [illegible] (100) [001] orientation. By [illegible] obtained at those temperatures at which secondary recrystallization begins - 800 to 850°C. In this temperature range a relatively small number of [illegible]

Card 3/6

Role of Secondary Recrystallizati[illegible]
Annealing, Cold-Rolled Transformer [illegible]

[illegible] orientated grain - "[illegible]" - form and grow, attaining [illegible] (up to several hundred [illegible]); as a result, a very large degree of texture perfection is attained - up to 90-95%. In view of the limited number of "centres of growth" and the relatively low linear rate of grain growth, the process is [illegible] is required for it to [illegible]. As the heating temperature is raised [illegible] "centres of growth" increases, [illegible] orientation decreases, [illegible] of low texture perfection. [illegible] growth is accelerated, but [illegible] decreases. Thus the [illegible] perfection of the [illegible] can be represented by [illegible] temperature where secondary [illegible]
c) The results obtained on [illegible] texture perfection with [illegible] explained; on slow heating, [illegible]

Card 4/6

Role of Secondary Recry[illegible]
Annealing Cold-Rolled Transformer [illegible]

accomplished under c[illegible]
of a perfect texture, [illegible]
in a higher temperature [illegible]
"centres of growth" are [illegible]
orientation. Therefore, [illegible]
for ensuring a highly t[illegible]
steel is sufficiently slow [illegible]
example, heating at a rate [illegible]
completion of secondary r[illegible]
temperature range. At [illegible]
and more) it is advisable [illegible]
intermediate soaking at [illegible] Rel[illegible].
d) Industrial steel strip, [illegible]
have been obtained, were [illegible]
rolling with intermediate annealing; the full relative
reduction in each pass was 50 to 70%. Results of [illegible]
investigations show that the phenomenon of secondary
recrystallization, accompanied by a sharp increase in
(100) [001] texture can occur even after one-stage
Card 5/6 rolling if the reduction exceeds 7%. It differs from

V/126-58-3-35/36

Role of Secondary Recrystallization in Texture Formation on Annealing Cold-Rolled Transformer Steel

two-stage rolling, in that secondary recrystallization with accurately orientated "centres of growth" begins at lower temperatures and requires longer soaking times - up to 8-10 hours - to go to completion. It appears that this fact has been responsible for the view existing around that it is impossible to get a perfect recrystallization texture after one-stage rolling. The effect of the intermediate anneal is [illegible] recrystallization texture [illegible] tion, as indicated in the [illegible] but also to exert an influence [illegible] secondary recrystallization in the final anneal- ment. From this point of view the [illegible] intermediate annealing must be very [illegible] is also pointed out in the paper [illegible] There are 5 references, [illegible]

Card 6/6 1 German.

(Note: This is a complete [illegible])

ASSOCIATIONS: Ural'skiy institut chernoy metallurgii (Ural Institute of Ferrous Metallurgy) and Verkh-Isetskiy metallicheskiy zavod (Verkh-Isetsky Metallurgical Works)

SUBMITTED: April 5, 1958

SOV/126-7-4-21/26

AUTHORS: Mironov, L.V. and Shvartsbart, Ya.S.

TITLE: On the Effect of Light Plastic Deformation on the Secondary Recrystallization and on the Formation of Texture in Cold-Rolled Transformer Steel

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 7, Nr 4, pp 631-632 (USSR)

ABSTRACT: It has been shown (Ref 1 and 2) that the formation of texture during annealing of cold-rolled transformer steel is associated with the secondary recrystallization. The most perfect texture is formed at the temperatures at which the secondary recrystallization begins (900 to 950°C), when the "nuclei of growth" are constituted by most accurately orientated grains (Ref 1). The process is comparatively slow at these temperatures, requiring 3 to 5 hours for its completion. The slow rate of secondary recrystallization during high temperature annealing makes it necessary to limit the rate of heating and precludes the possibility of the application of fast methods of annealing (induction heating, annealing in conveyor furnaces). The object of the investigation described in the present paper was to check the claims made by Umansky and Finkel'shteyn (Ref 3) that

Card 1/5

On the Effect of Light Plastic Deformation on the Secondary Recrystallization and on the Formation of Texture in Cold-Rolled Transformer Steel

the secondary recrystallization can be accelerated if the metal is slightly deformed before the high temperature annealing. Transformer steel of the usual composition (0.012% C, 3.10% Si, 0.09% Mn, 0.005% S, 0.01% P) cold-rolled to 0.35 mm thickness and showing clearly a tendency to secondary recrystallization completed in 4 hours at 920°C, under which conditions clearly pronounced texture, reaching 90 to 95% oriented grains, was formed, was used in the experiments Preliminary experiments showed that low temperature annealing (i.e. below the temperature at which secondary recrystallization begins) has no effect either on the parameters of the secondary recrystallization or on the final texture formed during subsequent high temperature treatment. The experimental specimens, annealed for 2 hours at 800°C, were cold-rolled to 2.5, 5.0, 7.5 and 10% deformation and then annealed at various temperatures between 700 and 1100°C. It was found that no secondary recrystallization had occurred in any of these specimens.

On the Effect of Light Plastic Deformation on the Secondary Recrystallization and on the Formation of Texture in Cold-Rolled Transformer Steel

in which the normal recrystallization only took place. The grain size was determined by the degree of deformation and the annealing temperature, the largest grains being obtained in specimens with 2.5 and 5% deformation annealed at 750 to 800°C; increasing the annealing temperature or the degree of deformation resulted in the reduction of the grain size after recrystallization. It should be mentioned here that in specimens with the critical degree of deformation faint texture was formed during annealing, even in those cases when the recrystallization led to the formation of grains of maximum size. In this case, texture did not exceed 20 to 25% (i.e the magnitude which is observed in material annealed below the temperatures of secondary recrystallization). It has been shown therefore, that subjecting the specimens to critical deformation not only did not accelerate the secondary recrystallization but retarded it, substantially lowering the final degree of the perfection of texture. The works'

On the Effect of Light Plastic Deformation on the Secondary Recrystallization and on the Formation of Texture in Cold-Rolled Transformer Steel

trials conducted in the plant "Elektrostal'" consisted of the following: transformer steel, cold-rolled to 0.53 mm, was annealed in a conveyor furnace at 950°C, the conveyor speed being 3 m/min, which corresponded to 2 minutes' holding of the metal in the heating zone, after this treatment the strip was cold-rolled to the final thickness of 0.5 mm and annealed for 4 hours at 1150°C in a bell furnace; another part of the same consignment of steel was fabricated in the form of strip 0.5 mm thick by the usual method i.e. without the application of the critical deformation before the final annealing. The properties of these two types of materials are given in the table on p. 632 under the following headings: treatment (with the application of critical deformation; by the normal method), the direction in which the test piece was cut out from the strip (longitudinal, transverse, longitudinal, transverse), specific losses, W/kg, $P_{10/50}$ and $P_{15/50}$; magnetic induction, B_{25}, gauss; grain size, mm^2; degree of

Card 4/5

On the Effect of Light Plastic Deformation on the Secondary Recrystallization and on the Formation of Texture in Silicon Transformer Steel

perfection of texture, % of the orientate grains. The application of the critical deformation can be recommended in cases when it is required to use cold rolling for fabricating isotropic materials, eg cold-rolled transformer steel with a low degree of texture. There is 1 table and 5 references, 4 of which are Soviet and 1 German.

ASSOCIATION: Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov zavod "Elektrostal'" (Ural Scientific-Research Institute for Ferrous Metals, Plant „Elektrostal'")

SUBMITTED: August 6, 1958

Card 5/5

PHASE I BOOK EXPLOITATION SOV/4535

Vsesoyuznyy sovet nauchno-tekhnicheskikh obshchestv

Mezhkristallitnaya korroziya i korroziya metallov v napryazhennom sostoyanii (Intercrystalline and Stress Corrosion of Metals) Moscow, Mashgiz, 1960. 358 p. 3,000 copies printed.

Ed.: I.A. Levin, Candidate of Technical Sciences; Ed. of Publishing House: I.I. Lesnichenko, Engineer; Tech. Ed.: V.D. El'kind; Managing Ed. for Literature on Metalworking and Instrument Making (Mashgiz): V.V. Rzhavinskiy, Engineer; Editorial Board: I.A. Levin, Candidate of Technical Sciences (Chairman), V.P. Batrakov, Candidate of Technical Sciences, V.M. Nikiforova, Candidate of Technical Sciences, and A.V. Turkovskaya, Candidate of Technical Sciences.

PURPOSE: This collection of articles is intended for technical personnel concerned with problems of corrosion of metals.

COVERAGE: The collection contains discussions of intercrystalline corrosion of stainless steels and stress corrosion of carbon steels, low-alloy and stainless steels, and light-weight and nonferrous alloys. The tendency of steels of various composition and system to corrode under certain conditions is discussed and the nature of corrosion and corrosion cracking is analyzed. No personalities are mentioned. Most of the articles are accompanied by bibliographic references, the majority of which are Soviet.

II. INTERCRYSTALLINE CORROSION OF STAINLESS STEELS

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

DUB..V, V. ., kand.tekhn.nauk; MELNIKOV, L.V., inzh.; KOLOV, V.I., inzh.

Annealing cold-rolled electrical steel continuous action furnaces. Stal' 20 no.6:543-547 Je '60. (MIRA 14:2)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov i Magnitogorskiy metallurgicheskiy kombinat.
(Annealing of metals)

MIKHALEV, M.S.; MIRONOV, L.V.

Metallographic control of steel for nonmetallic inclusions.
Stal' 20 no. 7:647-649 Jl '60. (MIRA 14:9)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov.
(Steel--Metallography) (Nonmetallic materials)

MIRONOV, L. V. Cand Tech Sci -- "Study of the recrystallization texture of transformer steel." Mos, 1961 (Glavniiproyekt under the Gosplan USSR. Central Sci Res Inst of [redacted] Metallurgy im I. P. Bardin). (KL, 4-61, 198)

S/196/61/000/011/005/042
E194/E155

AUTHORS: Sheftel', N.I., Dubrov, N.F., Mironov, L.V., and Kolov, M.I.

TITLE: Coiled lightly-textured electrical steel of good magnetic properties

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika no.11, 1961, 2, abstract 11B 6. (Vestn elektroprom sti, no.6, 1961, 69-73)

TEXT: Cold-rolled lightly-textured electrical steel has a number of advantages over hot-rolled. It can be produced not only in sheets but in coils, which ensures high uniformity of properties and allows the manufacturing processes to be mechanised and automated both in the actual production of the steel and in its application. The object of the work was to improve the properties of the coiled material. Particular attention was paid to reducing the specific losses whilst maintaining the required magnetic induction and plasticity. The specific losses may be reduced by increasing the content of Si and reducing that of C by reducing the sheet thickness and by using cold-rolling and

Card 1/3

Coiled lightly-textured electrical .. S/196/61/000/011/005/042
E194/E155

heat-treatment conditions that promote grain growth. High-temperature annealing was specially studied because of possible reduction in grain size of sheet steel with an Si content of 2% during the α—γ phase conversion at a temperature of 950-1000 °C. Investigations were made on cold-rolled steel strip of 0.5 and 0.35 mm thickness containing 0.05-0.01% C. Part of the strip was decarburised by annealing in a gas-hood furnace. After rolling with various degrees of reduction the strips were annealed in transfer furnaces and batchwise in hood type furnaces with hydrogen atmosphere and in vacuum. In both cases the highest grade of steel (E 3100) could be obtained only with a C content of less than 0.02%. In the transfer furnace the best magnetic properties were obtained by annealing below the phase conversion temperature. With annealing in hood-type furnaces the specific losses are lower than with transfer furnaces, the best result is obtained by annealing at 1150 °C. The lowest losses are obtained with a reduction of 5.8% in the second rolling after intermediate annealing (this is the critical reduction for electrical sheet steel). By reducing the sheet thickness from 0.5 to 0.35 mm the

Card 2/3

Coiled lightly textured ele trical S/196/61/000/011/005/04
E194/E155

specific losses are reduced, particularly when the Si conten
is increased to 2.2 2 3%.
2 literature references.

[Abstractor's note. Complete translation]

Card 3/3

MIRONOV, L.V.; DUBROV, N.F.; GUTERMAN, S.G.; GOL'DSHTEYN, M.I.; SMIRNOV, N.S., red.; CHAPAYKINA, F.K., red. izd-va; KOROL', V.P., tekhn. red.

[Phase transformations and properties of electrical steel]Fazovye prevrashcheniia i svoistva elektrotekhnicheskikh stalei. Sverdlovsk, Metallurgizdat, 1962. 34 p. (MIRA 15:12)
(Steel alloys--Magnetic properties)
(Phase rule and equilibrium)

MIRONOV, L.V., kand.tekhn.nauk; YERSHOVA, L.P., inzh.; DOROSHEK, S.I., inzh.; KOLOV, M.I., inzh.

Effect of carbon on the structure and properties of cold-rolled transformer steel. Metalloved. i term. obr. met. no.6:6-10 Je '62.

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov i Magnitogorskiy metallurgicheskiy kombinat.
(Sheet steel—Magnetic properties)

S/133/62/000/007/012/014
A054/A127

AUTHORS: Dubrov, N.F.; Mironov, L.V.; Koksharova, I.K.

TITLE: At the Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov (Ural Scientific Research Institute of Ferrous Metals)

PERIODICAL: Stal', no. 7, 1962, 638

TEXT: If they have a cubic texture, thin (0.05 - 0.08 mm) transformer steel sheets show a higher magnetic permeability and coercive force than those with a ribbed texture. To establish the factors affecting the formation of a cubic texture, tests were carried out covering the conditions of reduction, the number of passes, the temperature of intermediate annealing, the temperature and media of final annealing for sheets 0.05 - 0.3 mm thick. The steels tested contained 3% Si, the sheets were rolled from slabs 2.5, 4.5 and 6.5 mm thick. A cubic arrangement of the grains could be obtained during the final annealing, after cold rolling with high temperature intermediate annealing (950 - 1,100°C). At lower (750 - 850°C) temperatures during intermediate annealing the grains folbwed a ribbed or a mixed pattern. In strips 0.20 - 0.30 mm thick a cubic

Card 1/2

At the Ural'skiy nauchno-issledovatel'skiy ....

texture develops after three passes and reductions of 65 - 75% in each pass; application of two passes required the reduction to be increased to 80 - 83%, whereas for strips 0.05 - 0.1 mm thick, rolled 4 - 5 times, reduction could be decreased to 50 - 60%, to obtain the same effect. Strips 0.15, 0.20 and 0.30 - 0.35 mm thick should be rolled from slabs 3.0 - 3.5, 6 - 8 mm thick, respectively. The formation of the cubic texture can be promoted by annealing in a medium of dry hydrogen (dew point 60 - 70°C), or in deep vacuum (10^{-4} mm Hg). After vacuum annealing at 1,200°C, 0.05 - 0.08 mm thick steel sheets with a cubic texture displayed a magnetic permeability (μ_o, μ_{max}) of 2 - 3.5 and 30 - 36 thousand gauss/oersted and a coercive force of 0.17 + 0.23 oersted; these values are 2 - 3 times higher than in sheets having a ribbed texture. 0.20 - 0.30 mm thick strips had, after three passes and two high-temperature intermediate annealings with final annealing at 1,150°C a cubic texture up to 50% and ribbed texture to 20 - 25%. The magnetic induction values (longitudinally and transversally to rolling) were 18,250 and 16,300 gauss, respectively, whereas the corresponding values for ribbed texture were 18,300 and 14,300 gauss, respectively.

Card 2/2

LAPOTYSHKIN, N.M., kand.tekhn.nauk; MIRONOV, L.V., kand.tekhn.nauk; KOROBOVA, N.A., inzh.; BARANOVA, N.A., inzh.; BELYAKOV, A.I., inzh.

Structure of cold-rolled transformer steel. Metalloved. i term. obr. met. no.12:26-29 D '62. (MIRA 16:1)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii, Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov i Novosibirskiy metallurgicheskiy zavod.
(Steel—Magnetic properties)

KOKSHAROVA, I.K.; LYASKO, M.V.; MIRONOV, L.V.

Formation of a cubic texture in transformer steel. Fiz. met. i metalloved. 14 no.3:464-465 S '62. (MIRA 15:9)

1. Ural'skiy institut chernykh metallov.
(Steel--Metallography) (Annealing of metals)

KHOREV, V.N.; BARANOVA, N.A.; GORLACH, I.A.; KVASOV, Ye.I.; KRAMARENKO, I.S.; MIRONOV, L.V.; PRIVALOV, S.S.; LYASKO, M.V.; DUBROV, N.F.; MIRONOV, L.V.; KOKSHAROVA, I.K.; MIKHALEV, M.S.; LAZAREV, E.M.; KUZNETSOVA, I.R.; LAPKIN, N.I.; KRASIL'NIKOV, N.A.; GOL'DSHTEYN, M.I.; GUTERMAN, S.G.; ODINOKOV, Yu.I.; SKRYABIN, N.P.; KORSHCHIKOV, V.D.

Research by the Ural Ferrous Metal Research Institute. Stal' 22 no.7:621,623,638-639,670 Jl '62. (MIRA 15:7)
(Metallurgical research)

DUBROV, Nikolay Fedorovich; LAPKIN, Nikolay Iosifovich. Prinimal uchastiye ZASUKHA, P.F.; KOMBKA, B.A., retsenzent; MIRONOV, Leonard Vladimirovich; KRYZHKOVA, M.L., red. izd-va; BEKKER, O.G., tekhn. red.

[Electrical steels] Elektrotekhnicheskie stali. Moskva, Metallurgizdat, 1963. 383 p. (MIRA 16:7)
(Steel--Magnetic properties)

SHEFTEL', N.I., kand.tekhn.nauk; DUBROV, N.F., kand.tekhn.nauk; MIRONOV, L.V., inzh.; KOLOV, M.I., inzh.

Rolled low-texturized electric engineering steel with high magnetic properties. Vest. elektroprom. 32 no.6:69-73 Je '61. (MIRA 16:7)

(Steel--Magnetic properties)

KLINKOVSHTEYN, G., kand. tekhn. nauk; MIRONOV, M.

Review and bibliography. Avt. transp. 42 no.11:63 N '64.
(MIRA 17:12)

MIROMOV, M.A.; VOROB'YEVA, Ye.I.

Preparation of benzene solvents from sulfur-bearing oils.
Khim.i tekh.topl.i masel 5 no.5:32-36 My '60.
(MIRA 13:7)

1. Groznenskiy neftepererabatyvayushchiy zavod.
(Benzene) (Petroleum--Refining)

MIRONOV, M.A.

Practice of the permanent standing production conferences
Neftianik 5 no.8:25 Ag '60. (MIRA 14:8)

1. Predsedatel'postoyanno deystvuyushchego zavodskogo proizvodstvennogo soveshchaniya Groznenskogo neftepererabatyvayushchego zavoda.
(Groznyy--Petroleum refineries)

MIRONOV, M.A.

Work of the factory committee. Neftianik 6 no.3:27 Mr '61.
(MIRA 14:10)

1. Predsedatel' proizvodstvenno-massovoy komissii Groznenskogo nefteprомyslovogo zavoda.
(Groznyy--Petroleum--Refining)

MIRONOV, M. D.
USSR/Miscellaneous - Wood-working

Card 1/1

Author : Mironov, M. D.

Title : Mechanization of the labor in wood working

Periodical : Stan. i instr. 24/4, 29 - 30, April 1953

Abstract : The article deals with hand tools powered by compressed air. Several of these tools are described and illustrated. Drawings.

Institution : ....

Submitted : ....

MIRONOV, M.D.

Pneumatic combination tools. Vest.mash. 33 no.5:74-75 My '53. (MLRA 6:5)
(Pneumatic tools)

137-58-4-[illegible]

Translation from Referativnyy zhurnal Metallurgiya, 1958, Nr 4, p 66 (USSR)

AUTHORS Mironov, M.G., Yeliseyev I.S., Mel'nikov A.G., Kroneberg, D.A., Sereda, B.K., Ustalov V.A.

TITLE Forty Years of Copper Industry in the Ural Region (Sorok let mednoy promyshlennosti Urala)

PERIODICAL Byul. tsvetn. metallurgii, 1957, Nr 19-20, pp 55-60

ABSTRACT Bibliographic entry

1. Copper industry--USSR

Card 1/1

MIRONOV, M.G.; AKIF'YEVA, K.V., SDASYUK, G.V.

Defense of theses for a candidate's degree. Vest.Mosk.un.Ser.biol., pochv., geol., geog. 13 no.3:230-231 '58. (MIRA 12:1)
(Ryazan Province--Peat bogs)
(Altai Territory--Agriculture--Maps)

MIRONOV, M.I. --

"Heterogenic Acetylation of Cellulose" Cand Tech Sci, Moscow Chemicotechnolorical Inst, Moscow, 19[illegible]. (RZhKhim, No 20, Oct [illegible],

Survey of Scientific and Technical Dissertation Defended at USSR Higher Educational Institutions (10)

SO:. Sum. No. 481, 5 May 55

BOYKO, V. Ye., aspirant, MIRONOV, M. I., inzh.

Investigating efficient methods for molding large panels in vertical molds. Sbor. trud MISI no. 37:75-105 '60.
(MIRA 13:8)
(Concrete slabs)

GONCHAROV, Viktor Mikhaylovich; MURZIN, Leonid Gavrilovich; MIRONOV, M.I., inzh., retsenzent; BLIDCHENKO, I.F., inzh., retsenzent; MOSKVIN, G.N., inzh., retsenzent; SOBAKIN, V.V., inzh., red.; USENKO, L.D., tekhn. red.

[Fuel, lubricants, and water] Toplivo, smazka, voda. Izd.2., perer. i dop. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1961. 158 p. (MIRA 14:12)
(Railroads--Equipment and supplies)

ACC NR: AP6029071 SOURCE CODE: UR/0413/66/000/014/0128/0129

INVENTOR: Gerlovin, L. I.; Chernovin, N. A.; Averin, V. A.; Nagibin, A. Ya; Torgashov, A. L; Aleksandrovskiy, A. A.; Sigachev, V. P.; Mikhaylovskiy, M. M.; Mironov, M. I.

ORG: none

TITLE: Valve with a hydraulic or pneumatic piston drive. Class 47, No. 184684 [announced by the Special Design Office of the Baltic Boiler Building Factory im. Sergo Ordzhonikidze (Spetsial'noye konstruktorskoye byuro kotlostroyeniya Baltiyskogo zavoda)]

SOURCE: Izobret prom obraz tov zn, no. 14, 1966, 128-129

TOPIC TAGS: valve, hydraulic piston drive, pneumatic piston drive, hydraulic device, pneumatic device, piston engine

ABSTRACT: The proposed valve with a hydraulic or pneumatic piston drive is designed for opening and closing the through flow-section of main and auxiliary pipings. In order to synchronize the opening and closing of both pipings, its control piston is provided with an annular groove, which, in the open valve position, connects the

Card 1/2 UDC: 621.646.23-82-85

L 4[illegible]-66
ACC NR: AP6029071

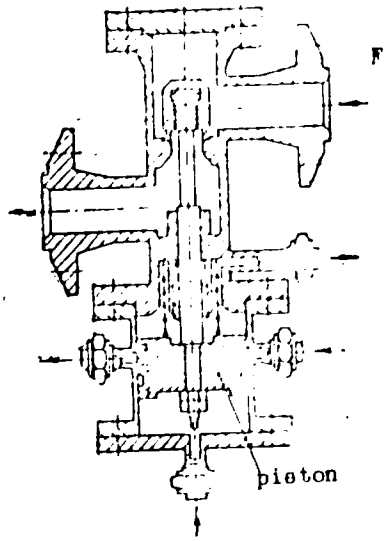


Fig. 1. Piston valve

intake and outlet cavities of the auxiliary piping (see Fig. 1). Orig. art. has: 1 figure. [AV]

SUB CODE: 21,13/SUBM DATE: 11May65/

Card 2/2 mjs

MIRONOV, M.N.; NIKOL'SKIY, G.V.

The law on the protection of nature and problems in ichthyological research. Vop. ikht. 1 no. 1:4-8 '61. (MIRA 14:5)

1. Ikhtiologicheskaya komissiya Akademii nauk SSSR.
(Fisheries—Research)

LAZOVSKIY, V.A.; NOVIKOV, A.N.; VED'KALOV, I.A.; MIRONOV, M.P.

Guniting open-hearth furances at the Izhora Plant. Stal' 2
no.4:322-324 Ap '65. (MIRA 18:11

1. Vsesoyuznyy nauchno-issledovatel'skiy i proyektnyy institut ogneuporov i Izhorskiy mashinostroitel'nyy zavod.

VASIL'YEV, Igor' Vladimirovich; MIRONOV, Rostislav Petrovich

[Burma; its economy and foreign trade] Birma; ekonomika i vneshniaia torgovlia. Moskva, Vneshtorgizdat, 1964. 159 p.
(MIRA 17:5)

MIRONOV, M. V., Candidate Tech Sci (diss) -- "A study of the behavior of titanium inthe processing of bauxites by the autoclave method". Moscow, 1959. 7 pp (Min Higher Educ USSR, Krasnoyarsk Inst of Nonferrous Metals im M. I Kalinin, Chair of the Metallurgy of Light Metals), 150 copies (KL, No 24, 1959, 139)

MIRONOV, M.V.; PAZUKHIN, V.A.

Behavior of titanium dioxide in alkali and aluminate solutions. Izv.vys.uchab.zav.; tsvet.met. 2 no.1:83-90 '59. (MIRA 12:5)

1. Moskovskiy institut tsvetnykh metallov i zolota. Kafedra metallurgii legkikh metallov.
(Titanium oxides) (Titanates)

MIRONOV, M.V.; PAZUKHIN, V.A.

Behavior of titanium dioxide in alkaline and aluminate solutions in the presence of lime and silica. Izv. vys. ucheb. zav.; tsvet. met. 2 no.2:89-96 '59. (MIRA 12:7)

1.Moskovskiy institut tsvetnykh metallov i zolota. Kafedra metallurgii legkikh metallov.

(Titanium oxides) (Chemistry, Metallurgic)

GUREVICH, D.A.; MIRONOV, M.V.

Problem of storage and transportation of sulfur. Khim. prom. no.6:462-463 Je '63. (MIRA 16:8)

(Sulfur--Storage) (Sulfur--Transportation)

MIRONOV, Mikhail Yefimovich; GRENSHTEYN, L.Yu., red.;

Oleksandr Kol'chyk. Kyiv, Derzh. vyd-vo tekhn. lit-ry URSR, 1961. 15 p. (MIRA 15:3)

(Coal mines and mining)

MIRONOV, M.Ye., starshiy inzh.

Meeting of the workers of the repair brigades of the ... Railroad. Avtom. telem. i sviaz' ...

1. Sluzhba signalizatsii i svyazi Yu... Zheleznoy dorogi. (Railroads Employees)

MIRONOV, M.

Consultation conference of the representatives of shoe industries.
Kozh.-obuv. prom. 7 no. 10:33 O '65.
(MIRA 18:11)

MIRONOV, N.

Visiting session of the Presidium of the Administration of the Scientific and Technical Society of the Light Industry Kosh.-obuv. prom. 7 no.4:40 Ap '65. (MIRA 18:6)

VINOKUROV, M.A.; MIRONOV, N.A.; SHAKIROV, K.Sh..

Influence of different forest types on the composition of soil humus. Nauch. dokl. vys. shkoly; biol. nauki no.1:184-187 '60. (MIRA 13:2)

1.Rekomendovana kafedroy pochvovedeniya Kazanskogo gosudarstvennogo universiteta im. V.I. Ul'yanova-Lenina.
(Forest influences) (Humus)

MIRONOV, N.A.

Improvements introduced by efficienty promoters at the "Skorokhod" shoe factory. Kozh.-obuv.prom. 2 no.9:39-40 S '60. (MIRA 13:10)
(Leningrad--Shoe manufacture)
(Efficiency, Industrial)

MIRONOV, N.A.

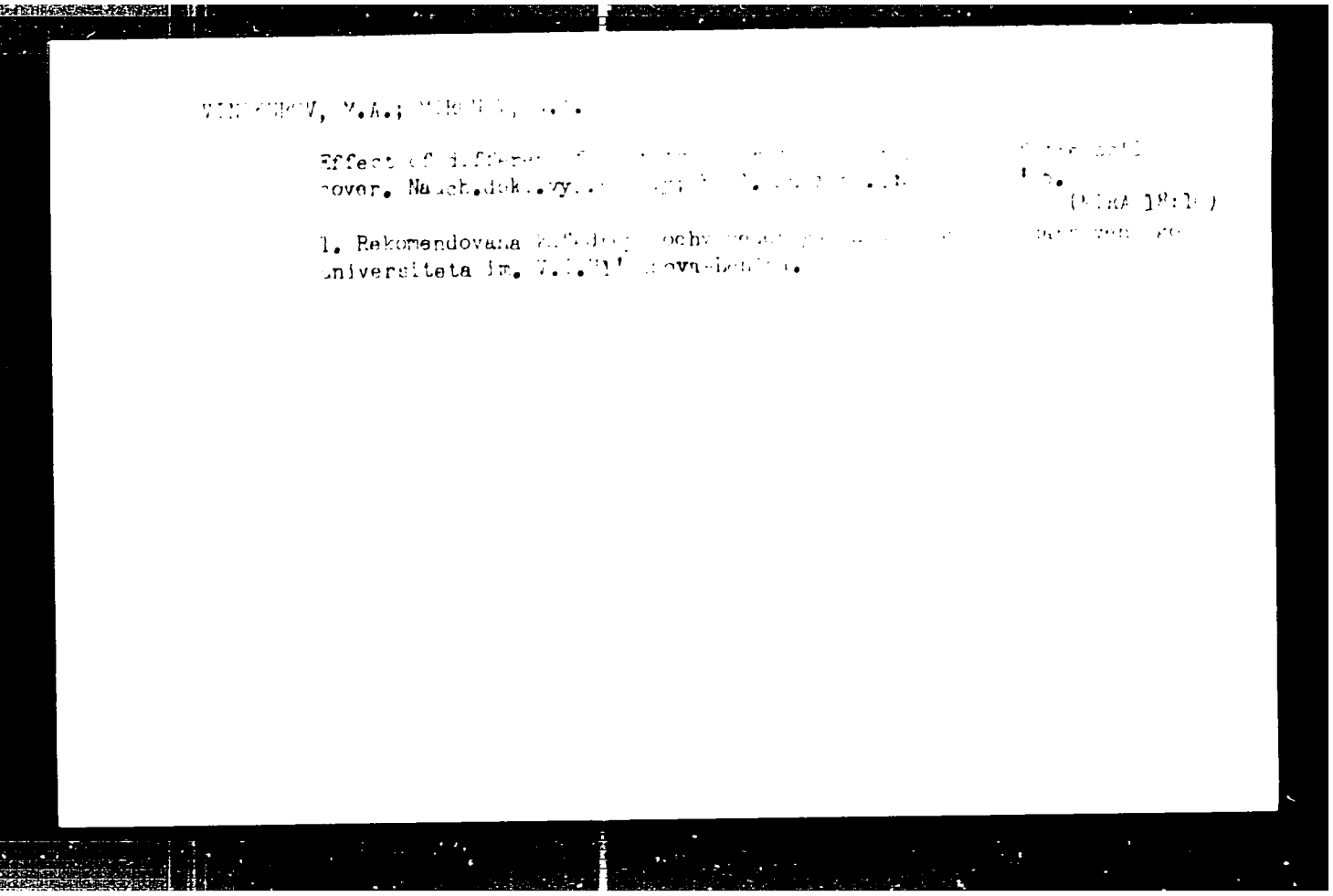
Exhibition of footwear manufactured by Leningrad factories. Kozh.-obuv. prom. 5 no.6:44 Je '63. (MIRA 16:6)

(Leningrad—Shoe manufacture—Exhibitions)

MIRONOV, N.A.

Interrelationship between the soil properties and the composition of mixed stands. Nauch. dokl. vys. shkoly; biol. nauki no.1: 199-204 '64. (MIRA 17:4)

1. Rekomendovana kafedroy pochvovedeniya Kazanskogo gosudarstvennogo universiteta im. V.I.Ul'yanova-Lenina.



POPOV, V.A.; MIRONOV, N.F.

Materials on the ecology of the field mouse Apodemus flavicollis Melch. Izv.Kazan.fil.AN SSSR.Ser.biol.i sel'khoz.nauk no.1:167-189 '49. (MLRA 10:2)

(Tatar U.S.S.R.--Field mice)

21(1)

AUTHORS: Meyerson, G. A., Sokolov, D. D., Mironov, N. F., Bogorad, N. M., Paknomov, Ya. D., L'vovskiy, D. S., Ivanov, Ye. S., Shmelev, V. M. SOV/89-5-6-3/25

TITLE: Beryllium (Berilliy)

PERIODICAL: Atomnaya energiya, 1958, Vol 5, Nr 6, pp 624 - 6[illegible] (USSR)

ABSTRACT: The production of beryllium in the USSR is carried out by the following methods:

1) Electrolysis of Na_2BeF_4 or of a mixture of $2BeO.5BeF_2$ with barium fluoride. The beryllium obtained is not of high value either quantitatively or qualitatively.

2) Electrolysis of a mixture of molten beryllium and sodium chlorides. By this method Be with the following impurities is obtained:

Fe	0.01 to 0.02 %	Cu	0.02 to 0.07 %
Mn	0.001 %	Si	0.01 %
Ni	0.02 to 0.05 %	Cr	< 0.003 %

Card 1/5

3) Reduction of beryllium fluoride with metallic magnesium. The purity of the beryllium produced in this manner is characterized by the following impurities:

Fe	0.08 to 0.10 %	Mn	0.01 to 0.02 %
Al	0.02 to 0.03 %	Cu	0.003 to 0.005 %
Si	0.01 to 0.03 %	Ni	0.003 to 0.005 %

4) Vacuum distillation.

The beryllium produced in this manner is the purest of all and contains only the following impurities:

Fe	0.005 %	Ni	0.003 %
Al	0.003 %	Cr	0.005 %
Cu	0.004 %	Mn	0.002 %

The production of metal-ceramic single parts is characterized by the following methods and parameters:

a) By Vacuum hard-pressing (10^{-2} to 10^{-3} torr) it is possible to produce large single parts or parts having a maximum density of 1.85 g/cm^3 and being of fine-grained structure as

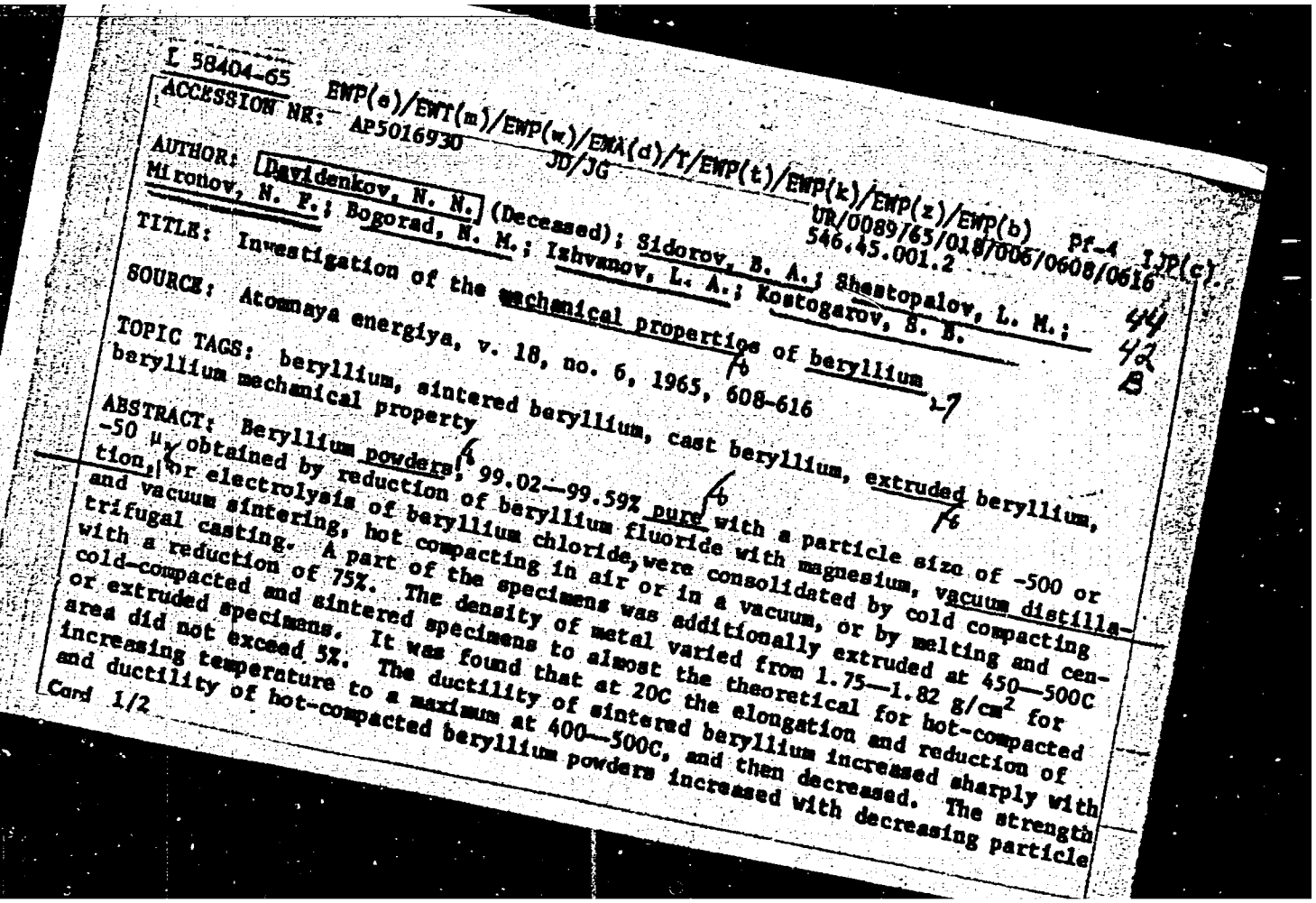
well as having mechanical properties that are equal in all directions. At 1140-1150° C the amount of pressure applied amounts to from 50 to 80 kg/cm^2.
b) Hot-pressing in air requires increased pressure values of from 100 to 150 kg/cm^2.
c) For the production of single parts of great density and strength hot-pressing is carried out in metal press molds in air at from 550 to 600° C and at a pressure of 4-5 t/cm^2.
d) Production of single parts with a density of from 1.75 to 1.82 g/cm^3. Beryllium powder is pressed with 10-15 t/cm^2 pressure, annealed in a vacuum at 1180-1200° C, and is then subjected to subsequent treatment at normal temperature and a pressure of 10-15 t/cm^2 or at 500-550° C and at a pressure of 8-10 t/cm^2.
The properties of beryllium vary within a large domain in dependence on purity and structure (according to B. A. Sidorov and M. I. Stepanov, collaborators at the laboratory of N. N. Davidenkov). The results obtained by means of mechanical

investigations show that the latter depend to a considerable extent on processing and on the condition of the surface. Beryllium parts are easy to grind. The refractoriness of beryllium in air is very high. After annealing for several hundred hours at 500° C it does not decay. At 1000° C, however, the surface begins to be covered with a thick and soft oxide layer already after one hour. The stability of beryllium with respect to water is quite satisfactory. Technical beryllium contains various inclusions also after the first vacuum-casting, which, above all, cause the leakage of gas. In order to avoid this it is advisable to combine vacuum-casting with simultaneous centrifuging (Ye. S. Ivanov, V. M. Shmelev).

A crucible of beryllium oxide is evacuated up to 1.10^{-4} torr after having been filled with pieces of beryllium and closed by means of a beryllium-oxide stopper. The crucible is heated to a temperature of 800-900° C. The furnace is filled now with argon (30-50 torr) and the metal is heated to a temperature of 1450-1470°. The crucible is kept at this temperature for five minutes, after which its contents is emptied into a rotating graphite mold. The single beryllium parts produced in this

MIKHOV, N.F., polkovnik, voyennyy shturman 1-go klassa

Complex use of course instruments. Mor. sbor. 47 no.8:[illegible] Ag '64.



L 58404-65 EWP(e)/EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b) Pf-4 IJP(c)
ACCESSION NR: AP5016930 JD/JG UR/0089/65/018/006/0608/0616
546.45.001.2

AUTHOR: Davidenkov, N. N. (Deceased); Sidorov, B. A.; Shestopalov, L. M.; Mironov, N. F.; Bogorad, N. M.; Izhvanov, L. A.; Kostogarov, S. B. 44 42 B

TITLE: Investigation of the mechanical properties of beryllium

SOURCE: Atomnaya energiya, v. 18, no. 6, 1965, 608-616

TOPIC TAGS: beryllium, sintered beryllium, cast beryllium, extruded beryllium, beryllium mechanical property

ABSTRACT: Beryllium powders, 99.02—99.59% pure with a particle size of -500 or -50 μ, obtained by reduction of beryllium fluoride with magnesium, vacuum distillation, or electrolysis of beryllium chloride, were consolidated by cold compacting and vacuum sintering, hot compacting in air or in a vacuum, or by melting and centrifugal casting. A part of the specimens was additionally extruded at 450—500C with a reduction of 75%. The density of metal varied from 1.75—1.82 g/cm^2 for cold-compacted and sintered specimens to almost the theoretical for hot-compacted or extruded specimens. It was found that at 20C the elongation and reduction of area did not exceed 5%. The ductility of sintered beryllium increased sharply with increasing temperature to a maximum at 400—500C, and then decreased. The strength and ductility of hot-compacted beryllium powders increased with decreasing particle

Card 1/2

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ACCESSION NR: AP5016930

size. Electrolytic and distilled beryllium is more ductile than that obtained by reduction with magnesium. Beryllium extruded from hot-compacted powders with a grain size of ~50 μ (the mean grain size 20—25 μ) had the highest strength and ductility at both room and elevated temperatures (up to 600C). For example, at room temperature the tensile strength was 45 kg/mm^2, the true tensile strength—48 kg/mm^2, the elongation—3.6% and the reduction in area—4.0%; at the temperature of maximum ductility, the elongation and reduction of area was 60 and 66%, respectively. Mechanical properties of sintered and of hot-compacted beryllium differed only slightly. But, generally, nonextruded, sintered and hot-compacted beryllium had comparatively low strength and ductility. However, after extrusion, the strength and ductility increased by 2—3 times; the yield strength increase was less pronounced. Cast beryllium was more brittle than beryllium prepared by the powder-metallurgy method; it remained brittle even with heating to 400C. The values of the strength and ductility obtained in compression tests were noticeably higher than those obtained in tension tests. Orig. art. has: 14 figures and 2 tables.

[MS]

ASSOCIATION: none

SUBMITTED: 12Jun64 ENCL: 00 SUB CODE: MM, IC

NO REF SOV: 003 OTHER: 006 ATD PRESS: 4042

Card 2/2 dop

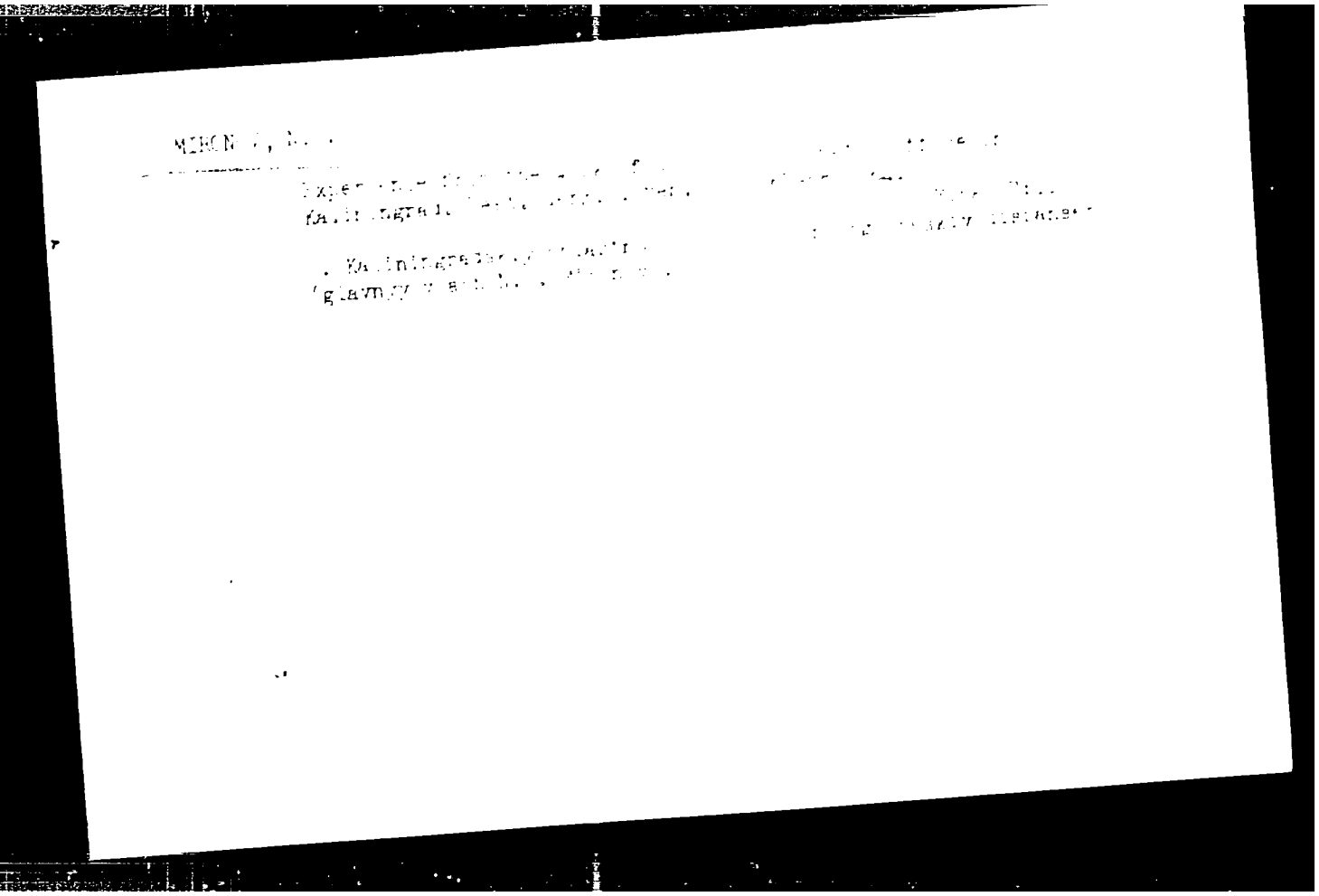
TINKER, I.S.; MIRONOV, N.I.; SHISHKIN, A.K.

"Prevention of plague" by V.M.Fedorov, I.I.Rogozin, S.K.Feniuk. Reviewed by I.S.Tinker, N.I.Mironov, A.K.Shishkin. Zhur.mikrobiol. epid. i immun. 28 no.4:155-157 Ap '57. (MIRA 10:10)
(PLAGUE--PREVENTION)
(FEDOROV, V.M.) (ROGOZIN, I.I.) (FENIUK, S.K.)

KOLOKOLOV, A.A.; SHCHETININ, N.V.; MIRONOV, N.I., inzh., retsenzent; ZUYEV, Yu.F., inzh., retsenzent; KRAYNOV, D.P., inzh., retsenzent; BRAYLOVSKIY, N.G., inzh., red.; VOROTNIKOVA, L.V., tekhn. red.

[Internal combustion engines for refrigerator rolling stock] Dvigateli vnutrennego sgoraniia izotermicheskogo podvizhnogo sostava. Moskva, Transzheldorizdat, 1963. 219 p.
(MIRA 16:7)

(Internal combustion engines)
(Refrigerator cars)



MIRONOV, N.K.

The Pavlovo metalworkers. Uch. zap. GPI no.46:103-109 '6.. (MIRA 18:4)

MIRONOV, N.M.; TRAVIN, G.Ya.

Brief news. Vest. derm. i ven. 3[illegible] no.7:92-94 J'63
(MIRA 16:12)

MIRONOV N.

G-1

Category: USSR/Analytical Chemistry- General Questions

Abs Jour: Referat Zhur-Khimiya, No 9, 195?, 30919

Author : Mironov N N , Odnosevtsev A I.
Inst : not given
Title : Mutual Effects of Hydroxides on Their Fractional Precipitation from Solution

Orig Pub: Zh obshch khimii, 1956, 26, No 4, 960-964

Abstract: By the method of potentiometric titration (NH_3 as titrating reagent) a study was made of the mutual effect of two hydroxides, on their fractional precipitation from solution containing a mixture of nitrates. Investigated were the systems Ti $(OH)_4$ (I - $Fe(OH)_3$ (II), I - $Al(OH)_3$ (III), I - $Ce(OH)_3$ (IV), I - $La(OH)_3$ (V), II - III, II - IV, II - V, III - IV and III - V. It was found that formation of colloids hindere the separation process, constituting one of the causes of co-precipitation The more basic hydroxide has a stabilizing effect on the colloidal solution of the less basic hydroxide, which is particularly

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Card : 1/2

Category: USSR/Analytical Chemistry - General Questions. G-1

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30919

pronounced in the case of Fe^{3+} and Al^{3+} ions. From the results of two experiments, in one of which the colloidal solution of II was formed in the presence of Ce^{3+} ions, while in the other the saltof the latter was added to the colloidal solution of II, the authors draw the conclusion that entrainment of ions of the second component takes place during the process of formation of the colloidal particles.

Card : 2/2 -3-

MIRONOV, N.N.; ODNOSEVTSEV, A.I.

Investigating multicomponent systems containing rare earths.
Zhur.neorg.khim. 2 no.9:2202-2207 S '57. (MIRA 10:12)

1.Gor'kovskiy gosudarstvennyy universitet.
(Hydroxides) (Systems (Chemistry))
(Earths, Rare)

MIRONOV, N.N.; ODNOSEVTSOV, A.I.

Extraction of rare earths from tailings. Zhur.neorg.khim. 2 no.9:2208-2211 S '57. (MIRA 10:12)

1.Gor'kovskiy gosudarstvennyy universitet, Kafedra neorganicheskoy khimii.

(Earths, Rare)

S/081/61/000/022/006/076
B102/B108

AUTHORS Mironov N N , Chernyayev, N P

TITLE Study of the reactions of $Ce(OH)_3$ and $La(OH)_3$ formation by potentiometric and conductometric methods

PERIODICAL Referativnyy zhurnal Khimiya, no 22, 1961, 46, abstract 22B316 (Tr po khimii i khim tekhnol (Gor'kiy), no 3, 1960, 456-463)

TEXT The following systems were examined by potentiometric and conductometric titration $Ce_2(SO_4)_3$ (I) - NaOH - H_2O; I - NH_4OH H_2O; I - NH_3 - H_2O; $CeCl_3$ - NaOH - H_2O; $CeCl_3$ - NH_3 - H_2O; $La_2(SO_4)_3$ (II) - NaOH - H_2O; II - Na_4OH - H_2O; II - NH_3 - H_2O; $LaCl_3$ - NaOH - H_2O; $LaCl_3$ NH_3 - H_2O It is shown that the sulfates of Ce and La tend to forming basic salts more readily than their chlorides The composition of the basic salts of Ce and La was determined The results of the determination of the composition of the precipitates are compared to data obtained

Card 1/2

S/081/61/000/022/006/076
B102/B106

Study of the reactions of

from solubility experiments [Abstracter's note Complete translation]

Card 2/2

S/081/61/000/023/004/0
B108/B147

AUTHORS: Mironov, N. N., Chernyayev, N. P.

TITLE: Study of the reactions of $Ce(OH)_3$ and $La(OH)_3$ formation by measuring the apparent volume of the precipitates

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1961, 46 abstract 23B329 (Tr. po khimii i khim. tekhnol. (Gor'kiy), no 3, 1960, 464 - 469)

TEXT: The systems $Ce_2(SO_4)_3$ - NaOH - H_2O ; $CeCl_3$ - NaOH - H_2O ; $La_2(SO_4)_3$ - NaOH - H_2O ; $LaCl_3$ - NaOH - H_2O have been studied by measuring the volumes of the precipitates. The compositions of the basic salts of La and Ce in these systems have been determined. It is shown that it is possible to extract La and/or Ce if the molar ratio OH^- : M^+ is properly chosen. The results are compared to data obtained in the study of the solubility by means of potentiometric and conductometric methods.
[Abstracter's note: Complete translation.]
Card 1/1

S/081/61/000/022/007/076
B102/B108

AUTHORS Mironov, N N , Chernyayev, N P

TITLE Study of the reactions of $Ce(OH)_3$ and $La(OH)_3$ formation by physicochemical analysis of the nitrates

PERIODICAL Referativnyy zhurnal Khimiya, no 22, 1961, 46, abstract 22B317 (Tr po khimii i khim tekhnol (Gor kiy), no 3, 1960, 470-476)

TEXT The following systems were studied by potentiometric and conductometric methods $La(NO_3)_3$ (I) - NaO - H_2O; $Ce(NO_3)_3$ (II) - NaOH - H_2O; I - NH_4OH - H_2O; II - NH_4OH - H_2O; I - NH_3 - H_2O; $Ce(NO_3)_3$ - NH_3 - H_2O, and, by measuring the apparent volume of the precipitates, the systems I - NaOH - H_2O and II - NaOH - H_2O The compositions of the basic salts and the La and Ce hydroxides in these systems were determined An analytical determination of La and Ce from nitrate solutions was found to be possible by potentiometric and conductometric titration of NaOH; their separation is also possible at the proper molar ratios of OH^- M^+ The

Card 1/2

S/081/61/000/022/007/076
B102/B106

Study of the reactions of

results of the determination of the precipitate composition were compared to data obtained from solubility determinations [Abstracter's note Complete translation]

Card 2/2

S/081/62/000/01 /005/053

5140/B186

AUTHORS: M ... V, ...

TITLE: ... of the formation of lanthanum ... hyd...

PERIODICAL: ... no. 19, 1962, 43, abstract ... tekhnol. [Gor'kiy], no. 3, 1961, 36 -

TEXT: ... the pH, and the electrical conductivity ... it was shown that the formation of basic salts ... in the systems ... Substitution of SO_4^{2-} by OH^- ions is ... difficult in the ... than those of Ce. The basic salts ... contain, with equal ... more hydr... formed from saturated solutions. [Abstracter's note: Complete translation.]

Card 1/1

S/081/63/000/001/016/061
B101/B186

AUTHORS: Mironov, N. N., Trofimova, L. M.

TITLE: Physicochemical study of the systems $La_2(SO_4)_3$ - $CaSO_4$ - NaOH - H_2O, $Ce_2(SO_4)_3$ - $CaSO_4$ - NaOH - H_2O

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 1, 1963, 74, abstract 1B498 (Tr. po khimii i khim. tekhnol. [Gor'kiy], no. 3, 1961, 569 - 573)

TEXT: The systems $La_2(SO_4)_3$ - $CaSO_4$ - NaOH - H_2O and $Ce_2(SO_4)_3$ - $CaSO_4$ - NaOH - H_2O were investigated by the solubility method, by measuring the pH, and by measuring the electrical conductivity. The compositions of the basic salts preceding the formation of the hydroxides were determined: $La(OH)SO_4$, $La_4(OH)_6(SO_4)_3$, $La_2(OH)_4SO_4$, $Ce_4(OH)_6(SO_4)_3$, $Ce_2(OH)_4SO_4$. $CaSO_4$ was not coprecipitated on the basic sulfates and the La and Ce hydroxides. The conditions for separation of La and Ce from Ca were determined. The pH values were found for the precipitation of $Ca(OH)_2$ in the presence of

Card 1/2

Physicochemical study of the... S/081/63/000/001/016/061
B101/B186

La and Ce hydroxides in sulfuric acid solutions. [Abstracter's note: Complete translation.]

Card 2/2

MIRONOV, N.N.; CHERNYAYEV, N.P.

Investigating the formation of cerium hydroxide. Zhur.neorg.khim. 6 no.9:2163-2172 S '61. (MIRA 14:9)
(Cerium hydroxide)

MIRONOV, N.N.; CHERNYAYEV, N.P.

Investigating the formation of lanthanum hydroxide. Zhur.neorg.-khim. 6 no.9:2173-2179 S '61. (MIRA 14:9)
(Lanthanium hydroxide)

MIRONOV, N.N.

Reactions involved in the f[illegible]
khim.i khim.tekn. no.1:85-8[illegible]

CHERNYAYEV, N.P.; MIRONOV, N.N.

Some properties of basic salts and hydroxides of lanthanum and cerium. Trudy po khim.i khim.tekh. no.1:90-98 '63.

(MIRA 17:12)

DEVYATYKH, Grigoriy Grigor'yevich, doktor khim. nauk, prof.;
PAVLOV, Aleksey Mironovich; OLNOSEVTSEV, Aleksandr
Ivanovich; MIRONOV, Nikolay Nikolayevich;
SHUSHUNOVA, Ada Fedorovna; ALAVERDOV, Ya.G., red.

[Manual of laboratory work in inorganic chemistry] Rukovodstvo k prakticheskim zaniatiiam po neorganicheskoi khimii. [Comp.], izd. 2, ispr. i dop. Moskva, Vysshaia shkola, 1964. [illegible] p. (MIRA 17:6)